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[AU/AU]; 65 Elbury Street, Mitchelton, Queensland 4053 (AU).

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(74) Agent: CULLEN & CO.; Level 26, 239 George Street, Brisbane, Queensland 4000 (AU).

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(71) Applicant (*for all designated States except US*): XS-TRATA QUEENSLAND LTD [AU/AU]; Level 3, West Tower, 410 Ann Street, Brisbane, Queensland 4001 (AU).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): HOURN, Michael, Matthew [AU/AU]; 14 Kinrade Place, Carindale, Queensland 4152 (AU). VENTURA, Rodrigo, Ulep [AU/AU]; 30 Beldale Street, Sunnybank, Queensland 4109 (AU). WILLIS, John, Anthony [AU/AU]; 56 Chancellor Street, Sherwood, Queensland 4075 (AU). WINBORNE, David

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(54) Title: REDUCING CYANIDE CONSUMPTION IN GOLD RECOVERY FROM FINELY GROUND SULPHIDE ORES AND CONCENTRATES

(57) Abstract: Precious metals such as gold can be extracted from a refractory ore using a conventional cyanide leaching step and with reduced cyanide consumption by pre-treating the ore prior to cyanide leaching. The refractory ore is pretreated by fine grinding and an initial leaching step which uses inexpensive limestone and lime to maintain the initial leach relatively alkaline. Oxygen is added to the initial leaching step and the conditions are carefully controlled to only partially oxidize the ground ore to between 9-15 %. The initial leaching step can be carried out at temperatures of less than 100 degrees C and at atmospheric pressures. The pre-treated ore is then leached by a conventional cyanide leaching step to recover the precious metal and cyanide consumption can be reduced by more than two thirds.

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